

Brown bear (*Ursus arctos* L.) - Greece

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I. Introduction - Species description

A. Physical characteristics

All observed and handled specimens showed that colour of the fur ranges through all shades of brown. It varies according to the immediate environment, the age and sex of the individual. The species is characterized by a sexual dimorphism. Males are usually larger than females. Total body length of an adult male may attain 1.75-2.00m and the mean weight is around 150 kg. An adult female weighs less: from 70-110 kg. Body weight of bears is never stable. It strongly depends upon natural food availability.

B. Habitat

Main features of bear habitat in Greece, are large remote mountainous forests characterized by mixed coniferous and hardwood vegetation with openings and reach undergrowth of fruit bushes and grass, rugged topography and rocky parts. Within the known species range, landscapes with agro-pastoral features are also part of brown bear habitat in Greece.

Bear habitat is primarily forested (72%). The most forested areas are in Rhodope (83,4%). Continuous forests with canopy cover exceeding 70% and covering over half the area of the forest complexes exist in about 2/3 of the Rhodope area and in about 1/3 of the western distribution nucleus (Pindos range).

C. Food habits

A comparative analysis between the three sectors of the bear range in Greece, show that the global bear diet is dominated by food items of plant origin: **93%** and **89%** for the western nucleus, and **88%** for the eastern nucleus. Fleshy and dry fruits compose the major proportion of the vegetable part in the bear diet. Animal material mostly composed by insects (especially ants), reptiles (**testudo sp.**) and livestock carcasses (and other species to be identified) completes the rest of the diet with **7%**, **11%**, and **12%** respectively. Up to 30 plant and animal species were identified in the bear's diet meeting the species nutritional needs.

D. Reproduction biology

Males and females meet only during mating season: from May to late July. Sexual maturity comes at the age of 4 -5 years. The female gives birth every 2-3 years in mid-winter. Average litter size is 1.8-2.2 cubs. Cases of 3 cubs in one litter as well as one case of 4 cubs in a litter have been registered. First telemetry data have shown that the female separates from yearlings after one year minimum. Telemetry studies showed that duration of hibernation of a female with yearlings was 95 days (in Rhodope nucleus).

E. Social structure

Bears are solitary and elusive animals. Males and females meet only during the mating period. The family group, composed always by the female and the cubs, forms a strong nucleus that usually splits after 2 years time. Telemetry data from a radio-tagged adult female bear in Rhodope showed that family separation

occurred 19 months after cubs' birth.

II. Distribution

Brown bear (*Ursus arctos*) range in Greece comprises two distinct nuclei located in Pindos range (total surface of continuous range 6,200 km²) and Rhodope mountain complex (total surface of continuous range 2,400 km²). Pindos distribution nucleus is the southernmost range of the species in Europe reaching almost the 39^o parallel.

Recent data (1988 - 2002) show trends of southwards expansion of brown bear range in Pindos nucleus. Bear presence has also been recorded on a permanent basis since 1985 on Voras (Kaimakchalan) Mountain.

Data for the period 1988-1995 give a more detailed map showing the frequency of brown bear presence within the total range. See map illustrating:

- a) Regular presence (reproduction of species in a continuous and regular basis - e.g. every 1-2 years).
- b) Sporadic or non regular presence (reproduction of species is sporadic, e.g. every 3-4 years, mainly solitary or dispersed animals from source areas occupy the area)
- c) Area/ areas with re-colonization by species (approximate starting period of re-colonization procedure must be defined).

Population fragmentation

In the western bear population nucleus, a serious risk of internal fragmentation at two points of the species range:

- in the area nearby the town of Kastoria
- in the area of Mt. Askion

In the eastern population nucleus a risk of internal range fragmentation occurs nearby the area of Nevrokopi (see distribution map).

III. Population status

Population estimates in numbers of animals and/or reproduction units.

Levels and trends: Actual brown bear minimum population size in Greece is estimated at 130-160 individuals (females with cubs spring surveys method). In Pindos range population is estimated at 115-145 individuals whereas in Rhodope it reaches 20-25 individuals. For the period since 1985 -1999 bear population in Greece shows locally increasing trends especially in the western distribution nucleus (Pindos range).

Mortality: For the period 1985-1990, known cases of average human-caused bear mortality affects 11.6% - 15.5% of the minimum bear population estimated at 90 to 120 individuals.

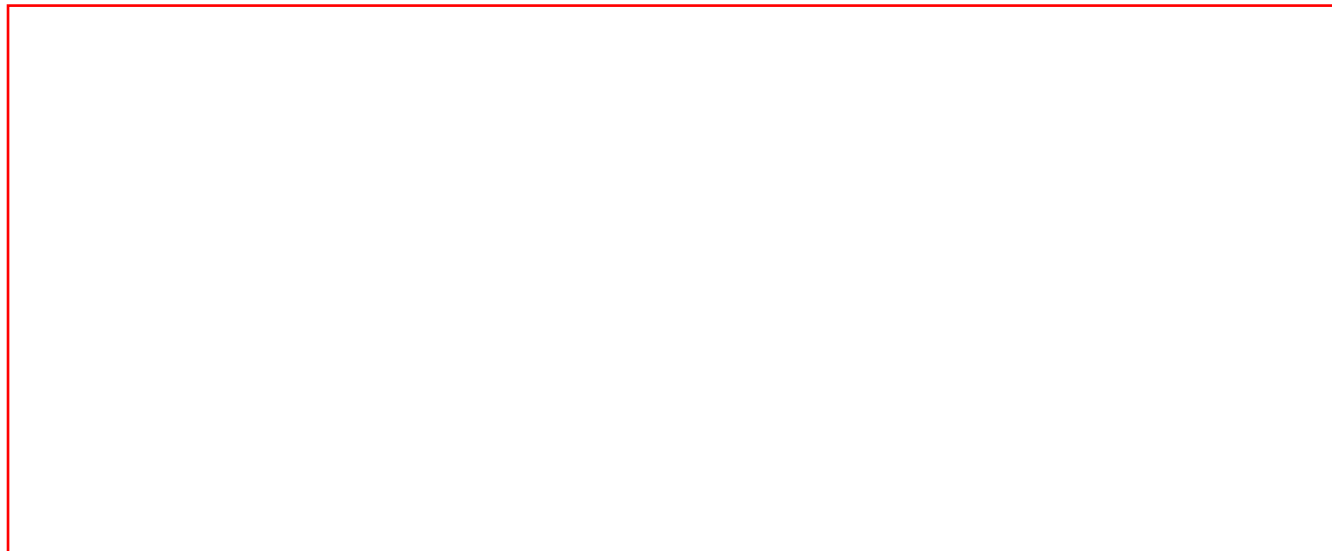
For the period 1994-1995, known cases of average human-caused bear mortality affects 8.4%-10% of the minimum population estimated at reach 110-130 individuals.

For the period 1997-99 known cases of average human-caused bear mortality affect **3.75% - 4.6%** of the minimum bear population estimate at 130-160 individuals .

IV. Habitat

Three primary vegetation zones prevail in the bear habitat: the oak forests (*Quercus sp.*)(46%), the beech - fir (*Fagus sp. - Abies borissi regis*) forests (30%), and the black pine (*Pinus nigra*) forests (19%). The remaining 6% is covered mainly by mountain coniferous forests, Scots (*Pinus sylvestris*) pine and Spruce (*Picea abies*) forests.

Composition of bear habitat in Greece, in terms of forest vegetation zones is given in the following table:
Table 1.



Recent results from telemetry studies showed that in Pindos nucleus, annual home ranges for 6 different bears, estimated by "minimum convex polygon" method, were: 206 km² for a sub-adult male and 483 km² for an old male. For two adult males the home range was 312 km² and 507 km², respectively, extending also on Albanian territory. For a third adult male, who is still monitored, autumn home range was 102 Km². For a female bear, only the summer home range was calculated up to 13 km². Seasonal home range for all bears showed highest values during fall (maximum 373 km² estimated for the old male). Partial and spatial overlapping of home ranges occurred for all bears.

In Rhodope nucleus, the total home range size of a family group was 411 Km². Autumn and early winter home range sizes, of the "family group", was larger (280 km²) than the one after separation from her cubs (59 km²).

V. Conflicts with humans

A. Damages on livestock, beehives and crops

According data from ELGA (The National Organisation for Farmers' Insurance) and ARCTUROS (processed by Spyros Psaroudas, ARCTUROS), the level of damage caused by the species to livestock, beehives and crops is fluctuating between approx. 84,000 and 145,000 EUROS. This is illustrated in the following graph:



B. Compensation system:

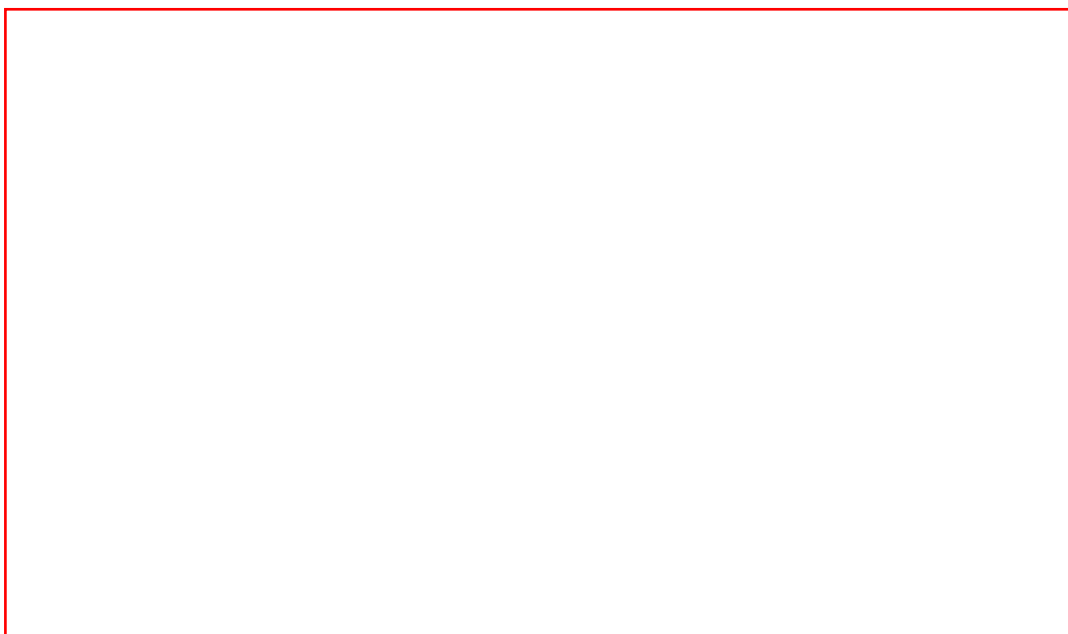
According to national law amendment in 1990, the National Organization for Agricultural Insurance compensates 100% of bear damage on livestock and beehives (only swarms). In 1997 and after a long period of pressure from ARCTUROS NGO, the national compensation system was improved to compensate 100% bear damage on crops, orchards, beehive boxes and younger cattle.

C. Preventive measures used.

The preventive measures used to avoid bear-human conflicts consist of two types: electric fencing of beehives and use of traditional shepherd dogs.

D. Human population density

Human population density distribution within the bear range is showed in the following diagram.



E. Distribution of livestock within bear range

Distribution of livestock within bear range is given by the following diagram:



VI. Legislation

The brown bear is a fully protected (priority) species under National law (86/69, article 258) and according to the harmonization of E.C. Directive 92/43 to the Hellenic legislation.

VIII. Threats

- A. Human caused mortality (animals killed per year - for figures see "mortality" at paragraph III - "population status", above).
 - Resentful farmers for bear damage caused on livestock and crops (use of fire-guns, illegal use of poison).

- B. Habitat degradation and fragmentation by
 - Highways and other infrastructure construction.
 - Forest fires

- C. Lack of information and/or negative attitude of specific target groups (e.g. hunters).

IX. Conservation actions

A. National Action Plans.

A.1 National Level: A Bear Action Plan was produced after completion of the first LIFE-Nature project in Greece (1996).

A.2 International Level: A national action plan was established and improved by National Authorities and

the Council of Europe in the frame of the Pan-European Action Plan for large carnivores (2000).

B. Conservation projects: Two LIFE -Nature Projects for conservation of brown bear and its habitats were completed. Another LIFE-Nature project is currently (2000-2002) implemented in areas of Rhodope and Gramos, including relevant brown bear conservation actions.

(Sources of the above data are mainly: LIFE93NAT/GR/010800, LIFE96NAT/GR/03222, LIFE99NAT/GR/06498 projects, Mertzanis (1992), Mertzanis et al. 1994.)

Wolf in Greece

Constantinos Godes, ARCTUROS, prepared this paper, using data from the Final Report of the LIFE-Nature project "Conservation of the wolf (Canis lupus L.) and its habitats in Central Greece", which was implemented by ARCTUROS between January 1998 and December 2001.

I. Introduction - Species description

The wolf is the largest member of the family Canidae, and is characterised by a high level of intelligence and well-developed social organisation. It acquired its present form one and a half million years ago. The colour of the Mediterranean wolf is predominantly brown and grey. It weighs 20-40 kilos and has a lifespan of 8-16 years.

The wolf is a carnivore and feeds mainly on wild herbivorous animals (ungulates) when these exist in sufficient numbers. But when its usual prey is unavailable or very scarce, the highly adaptable wolf turns to smaller vertebrates, livestock, or even anthropogenic sources of food, such as garbage or dead animals. The wolf has become an efficient hunter, even of animals much larger than itself, by developing co-operative methods in the pack, which are based on a strict and fixed social hierarchy. One characteristic common to wolf populations all over the world is their social organisation in groups or packs, both large and small. Usually, only one pair of wolves in the pack reproduces, the dominant pair.

The structure of its body and its hunting skills are adapted to enable it to immobilise its prey easily. It has a large head and powerful jaws (with a bite twice as strong as a dog's), a narrow chest, long legs, and a light skeleton, enabling it to cover long distances and make its way through snow easily. Wolves have tremendous stamina, running or walking fast for eight to ten hours a day and covering many kilometres in the process.

Wolves use all their senses to locate and track down their prey. They can see moving objects over a long distance and their night vision is good. Their most highly developed senses are hearing and smell. Their nasal cavity is fourteen times greater, proportionately, than humans'.

Wolves communicate with each other with a variety of sounds, though they reveal their moods and intentions mainly through facial expressions and specific body postures. When they are very far apart, they communicate by howling: they can hear each other howling up to ten kilometres away. The members of a

pack howl in order to locate one another, but also to drive an intruder from another pack out of their territory.

Each pack moves within a strictly defined area, its territory, which the dominant male marks out by urinating around the perimeter.

The nucleus of the pack is the dominant reproductive pair, which may stay together all their lives. The wolf reaches reproductive maturity at 22 months. The female produces a litter of 3-7 cubs once a year, in spring, after a pregnancy of about 63 days. While she is suckling them, the male feeds her. When they are weaned, the cubs are fed on food regurgitated by the adult members of the pack. Other pack-members, apart from the parents, help to rear the cubs, bringing them food and protecting them. Young wolves who are going to leave the pack start to do so at the age of about one year, gradually moving out of the area in which they were born in search of territory of their own.

II. Distribution

The wolf in Greece occupies a great variety of habitats, from degraded, hilly areas to densely forested mountains. The greater numbers are found in mountainous and semi-mountainous areas with low human population. Up until the 1930's the species distribution extended to the whole of the mainland country. The wolf was exterminated from the region of Peloponisos to the south prior to the 1940's and from the Prefectures of Voiotia and southern Fokida (Central Greece) in the 1960's. Re-establishment of wolf numbers begun in the 1980's due to the abandonment of the bounty system and the use of poisoned baits. Population numbers seem to be stable in most parts of its range, with a possible increase in its southern distribution. Today, wolf distribution extends from Thrace in north-eastern Greece, to Voiotia in southern Central Greece. Although small gaps between wolf territories exist, there is no evidence of complete fragmentation between neighbouring wolf areas.

Potential fragmentation or lower genetic flow rate barriers include the Axios River and the Thessaloniki-Skopje highway in the north, as well as the construction of the Egnatia Highway running east-west from the Ionian Sea to the borders with Turkey.

III. Population status

In the past, wolf population estimates ranged from 3.000 (Min. of Agriculture, 1980) to 300 (Univ. of Athens, 1998) individuals. The LYCOS Project, which was implemented by ARCTUROS from 1998 to 2001 and used various field techniques as well as other available data, estimated the wolf population in the country at approx. 800 individuals or 91 wolf packs. Of those, 126-172 animals live in the region of Central Greece, which was a site of special focus in the project.

In northern Greece wolf numbers seem to be stable during the last ten years, although in certain regions, such as Epirus and Halkidiki, a decline in numbers has been reported, possibly due to the illegal and indiscriminate use of poisoned baits. In areas of the southern range of its distribution, wolf presence has changed from periodical to regular during the last 10-15 years. There is no evidence, however, that this positive trend corresponds with an overall increase of wolf densities. Short-term number fluctuations have been reported all over Greece, but these are mostly due to periodic cycles of extermination and decolonisation processes. Overall wolf range expansion is not evident in areas where the species has been absent for a long period of time.

IV. Conflicts with humans

Wolves cause considerable damage to livestock in Greece. For the year 1998, about 1503 cases of damages

caused by wolves and/or dogs were compensated from the national farmers' insurance authority (ELGA). From the analysis of the data derived from the same source and for the years 1996-1998, it follows that the areas with no wolf presence have seven (7) times less damage (measured at attacks per 1000 sq.km) compared to areas with regular use presence. Stray/ferral dogs probably cause damages to livestock in the former areas.

Confirmed attacks to small livestock (sheep and goats) amount to 48% of the total attacks. The percentage of attacks to cattle and calves is about 47%, while about 5% of the attacks concern mules, horses and donkeys. Wolf attacks to dogs are also common in certain areas and seem to be a local habit/adaptation of specific wolf packs.



Surplus killing is also common in all wolf-occupied areas, but the total percentage of these cases is low. The total amount of money that was paid as compensation for *Canidae* damage to livestock in the municipalities where wolves exist, is approx. 205 million GDR (about 603.000 US\$) per year (mean value for the period 1996-1998). For the year 1998, 880 cattle of all age classes were compensated (245.000\$), 2908 goats (150.700\$) and 2986 sheep (170.455\$). There is a minimum level of damage to livestock below which no compensation is given. This is four sheep/goats or one calf with more than one year of age. Thus, many small attacks are left uncompensated, which when added over a year can result in a serious loss of animals and income.

The most common preventive methods include nighttime enclosures, restriction of young animals from free-grazing, attendance of the flocks by the shepherds and use of guarding dogs. The last practice has been a tradition for thousands of years that is nowadays declining, mostly due to the changing methods of grazing. Furthermore, the traditional breed of the Greek Sheepdog, which is ideally adapted for that role, is almost extinct due to crossbreeding with stray dogs and neglect by shepherds and State alike.

V. Legislation

Wolf is classified as a vulnerable species according to the red data book of Greek Fauna. It is protected since 1991, but law enforcement is rare. Local forestry services usually "accept" illegal killing of wolves by shepherds or poachers, which is very widespread and common in the whole wolf range. This situation is accepted by local forest services usually due to the high rates of wolf damage. Illegal killing of wolves is considered a way not only to reduce damages to livestock, but also mainly to reduce tensions. Moreover, as the existing compensation system does not cover the majority of wolf depredation events and official

involvement in damage prevention activities is negligible, there is nothing left to do than allowing illegal wolf control. Even in the few cases where legal wolf control takes place, this is not based on biological or other well-defined criteria. Most local inhabitants, including local forestry service personnel, consider the total protection of the wolf controversial and undesirable.

Only in cases where persecution of wolves becomes widely known through media (TV), are competent authorities forced to enforce the relevant legislation.

VI. Special issues

- *Hybridisation*: There is no evidence of wolf hybridisation with stray/feral dogs in Greece. DNA analysis performed in 1999 in 33 wolf samples showed that genetic differentiation between Greek wolf and dog populations was significant, which suggests that there is very limited gene flow. If hybridisation between wolves and dogs is ongoing in Greece it is very rare. Only one wolf sample has been assigned to the dog population and was the only sample, which was collected from a not well-preserved and recognizable animal. Skull characteristics indicate that this sample was probably a dog that was mistakenly considered as a wolf.

- *Stray/feral dogs*: Their presence is a common occurrence in most rural areas investigated (60%). Stray/feral dogs can be found in or near villages, in garbage dumps, near slaughterhouses or even high on the mountains. They may cause considerable damage to livestock, as is evidence in areas without wolves, but reports rarely differentiate between damages by wolves or dogs, as they are both being compensated. Thus, in many cases wolves are blamed for these damages as well. In areas where both wolves and stray dogs exist, the latter often become prey for the wolves.

- *Wild ungulates*: Four species of wild ungulates exist in Greece. Wild boar (*Sus scrofa*) is widespread in Continental Greece where locally can reach high densities.

Roe deer (*Capreolus capreolus*) is also widespread in continental Greece but it does not seem to exist in substantial densities although its hunting is not permitted outside the few controlled hunting reserves. In the contrary wild boar is heavily hunted all over its distribution.

Chamois (*Rupicapra rupicapra*) population does not exceed a total number of 600 animals forming small and isolated groups in remote mountain areas. Chamois is a protected species in Greece, but local poaching persists.

Red deer (*Cervus elaphus*) is actually extinct in Greece. Only one re-introduced small population of 130 animals lives near Athens (NP of Parnitha). Sporadic appearances have been also recorded in Rhodope Mountains in the borders with Bulgaria.

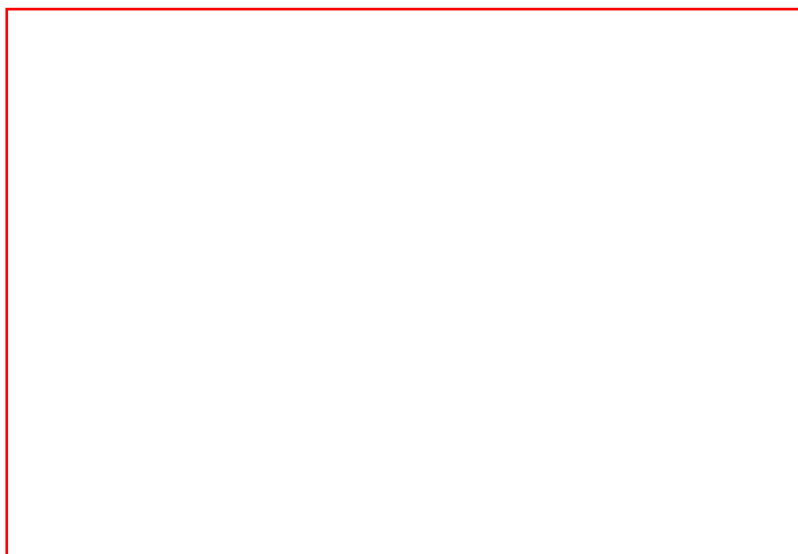
From the 91 wolf territories defined through the dissemination of the questionnaire in a percentage of 65% of them, both wild boar and roe deer presence was also recorded. In a percentage of 18% only presence of wild boar was recorded. In the rest of wolf occupied areas (17%) neither of the two species was present.

VII. Threats to the species

Human-caused mortality appears to be one of the main threats for the wolf, as the species is extremely well adapted to the degradation and constant changes of its habitat. Although the wolf is a protected species in Greece since 1991, official control is rare and only in cases where confirmed damages to livestock are reported. Actually, this kind of control rarely occurs. During the period 1995-1997 only 17 wolves were killed by authorized permission and all were in the same controlled hunting reserve. Thus, official hunting data cannot contribute to an estimation of the numbers of wolves killed each year.

From the analysis of 415 cases of human-caused wolf fatalities reported by local people (direct evidence)

during years 1990-1998, a total of 555 killed animals were found. 448 of these were adult and/or yearlings and 107 were pups. Since the killing of wolves is prohibited by the Greek legislation, many people are afraid to give data for dead wolves, so it is not possible to make an accurate estimation.



The methods presented at the graph are the following:

- A. Accidental meeting with wolf (0.2%).
- B. Accidental death of wolf after collision with automobile (3.5%).
- C. Death of wolf after ingesting poisoned bait (7.2 %).
- D. Killing of wolf pups at / or near wolf dens after accidental or by purpose discovery (8.5%).
- E. Killing of wolf with rifle after an ambush near a wolf- killed livestock carcass (10.6%).
- F. Killing of wolf with rifle during hunting season for other game species - especially during wild boar hunting (14.2 %).
- G. Killing of wolf with rifle with or without shepherd dog assistance, during or soon after wolf attack to livestock (23.5%).
- H. Killing of wolfs with rifle after organized drive hunts especially for wolves (32.4%).

The most common methods used to kill wolves are shotguns and poisoned baits. Although the latter method has been officially completely banned since 1993, it is still widely practiced in rural areas for predator control. Together with wolves, other wildlife species die from the baits (bears, birds of prey), as well as domestic animals (shepherd and hunting dogs). A small percentage (3.5%) of wolf deaths is attributed to road accidents.

Habitat fragmentation mainly due to the construction of large-scale works presents another danger for the wolf population. High-speed motorways without "green bridges" or wildlife under-passages are an unsurpassable obstacle that isolate sub-populations and prohibit gene flow between neighbouring packs. In some cases this can lead to extensive in-breeding and genetic deterioration of the sub-population.

VIII. Conservation measures

A number of conservation measures need to be taken in order to ensure the viability of the species in the future. These may include:

- Improved wild ungulate population management in order to ensure a natural prey basis for the wolf.
- Prevent wolf habitat fragmentation by enforcing Environmental Impact Assessment studies prior to the construction of large-scale public works.
- Adoption of a National Management Plan for the wolf.

- Enforcement of existing legislation in order to minimize poaching and use of poisoned baits.
- Control of stray/feral dogs in rural areas with wolf presence so as to minimize damages to livestock.
- Promote preventive measures to reduce human-wolf conflicts.
- Maintain and improve the national livestock compensation system.
- Implement informational and educational campaigns, especially in areas with wolf populations.

Historical distribution and present status of the lynx (*Lynx lynx*) in Greece

Compilation from relevant references: Constantinos Godes, ARCTUROS

Past and present status and distribution

The lynx has been widespread, but quite rare in Greece during the 19th century and the beginning of the 20th. During that period, lynx distribution expanded from Thrace south to the Peloponnese. The scientific mission of Morias (Peloponnese), which took place in the last decades of the 19th century, reported lynx distribution in the Peloponnese on several mountains. However, the lynx was more common and widespread on the mountains of southern and northern Pindos and on the mountains of Macedonia and Thrace: Mt. Vitsi, Mt. Varnoundas, Mt. Voras and Rhodope Mts. Regular sightings date back 40-45 years in the plain of Vistonida Lake (Thrace) and the Nestos Delta "Kotza Orman" Forest, until the large-scale deforestation of the alluvial plain, in the early 1950s.

Over the last 40 years, there has been a dramatic reduction in the original distribution of the lynx. In 1991-1993, a National Inventory of Fauna and Flora, collected recent data of lynx presence in Greece. Today, there are scarce reports of observations from N. Pindos and Voras Mts. The last reports of sightings and/or damage in the Evros Mts. and the region of Thrace date back 35-40 years. However, the present status of the lynx in Greece remains uncertain.

Northern Pindos Mts. Is an area of extensive mixed and coniferous forests with scattered human settlements, which covers almost 1000 km². In general, the people interviewed knew very little about the lynx and the older people had only a faint idea of the species' appearance and behavior. There were three reported sightings and a case of livestock damage. Re-colonization from Albania is a faint possibility, as the animal has been absent in the area during the last 20 years.

In the mountains of **Evros** (Thrace), villagers are more familiar with the lynx, where the species has the local name "sari gutzuk" (**sari** = reddish, **gutzuk** = short tailed). The shepherds reported that the lynx was already rare during the period 1950-1960. Local people are familiar with the cry of the lynx and shepherds believe that the lynx were frightening away the wolves, which were responsible for the killing of numerous sheep and goats. The lynx was attacking too, but in a different manner, killing one or two animals at a time on a regular basis. The last two lynx in the Evros region were sighted by local shepherds at the end of the 1960s.

The region of **Central and Western Rhodope Mts.** is a large, undisturbed forested area covering more than 2000 km². Most of the villages within this mountain range are now abandoned. During the last 35 years and after the abandonment of traditional livestock raising practices, the area has been naturally reforested with dense forests of spruce, beech and pine. Although the Rhodope Mts. have some ideal characteristics as lynx habitat (good roe deer numbers, extensive forest coverage, very low disturbance), the linkage with the Pindos Mts. and other forested areas to the west is problematic, since large intensively cultivated plains interfere. Moreover, the lynx is extinct in the north (Bulgarian Rhodope Mts.) and the east (European Turkey). Thus, it has been quite impossible for the lynx to re-colonise the area after its extinction.

Mt. Voras or Kaimaktchalan is the third highest mountain in Greece and together with Mts. Tzena and Pinovo they form a continuously forested mountain range along the border with FYROM. The region has recently been recolonised by bears, originating from the neighboring mountains of FYROM. In the mid-90s, there were two unconfirmed lynx sightings in the area.

The alluvial plain of **River Nestos** holds today the largest riverine forest in Greece and one of the largest in the Balkans, the "Kotza Orman". Today, a significant part of the forest has been restored to its natural status and the restoration project is still continuing. The population of jackals is increasing, and a new population of wild boar has been established. The area hosts the only autochthonous wild pheasant population in Europe. During 1998-99, three lynx sightings have been reported in the area.

Damages to livestock

Shepherds in Thrace have reported occasional damage, dating 30 years back. They can identify differences between wolf and lynx attacks. They report that the lynx attacks one animal at a time, and the dogs are afraid of it. Most of the documented reports and the only ones of recent damages are from N. Pindos Mts.

Protection status of the lynx in Greece

The hunting of lynx has been prohibited by law since 1937. Today, hunting is prohibited by the hunting law (s. 258, par. 2z of LD 86/69, as amended by s. 7 of Act 1775/75). The lynx in Greece is also protected under the Bern and the CITES Conventions.

Habitat suitability and prey base

The abandonment of traditional livestock raising practices, as well as the immigration of many people to the larger cities has led to a marked increase of forest coverage in Greece by 7,9% (National Forest Inventory, 1992) from 18% to 25.9%. Dense forests, especially in Rhodope and N. Pindos, today cover areas that had been previously dominated by pastures. A large proportion of these areas are protected (National Parks) or their legal protection is under way (Natura 2000 sites).

Although forest coverage is increasing, the prey base remains poor in most areas that could be suitable lynx habitat. Concerning the wild ungulates:

- Red deer is extinct, with only a few individuals remaining in Rhodope Mt.;
- Roe deer is widespread, but the populations are greatly reduced due to illegal hunting;
- Chamois exist in small isolated populations;

Other prey species (hare, grouse, partridge) may be wide-spread but with low or unknown

densities. Additional potential threats include the extensive mountain-road network, large-scale logging which causes deterioration of the best forest stands and disturbance by hunting and poaching.

Prospects and needs for the future

1. Collection of all historical data on lynx presence in Greece after 1950. The collection of these data must utilize a questionnaire, which will also reveal the causes and time of extinction.
2. Fieldwork in target areas (N. Pindos, Mt. Voras, Nestos Delta) must include a monitoring program in areas bordering mainly on FYROM and Albania, where observations should be regularly collected and evaluated. Collaboration with local game farmers and stock raisers is needed in order to examine kills on roe deer and livestock, respectively. To this end, collaboration with ELGA (State organization for damage compensation) would help in the quick identification of livestock damages that can be attributed to lynx.
3. Parallel work and collaboration with FYROM, Albania and Bulgaria, concerning questionnaire dissemination and livestock damage inspection.

Literature referring to the lynx in Greece

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